



STATUS OF CLAIMS

Claims 7-11 are currently pending in the application and stand rejected for various reasons.

Claims 7-11 are rejected under 35 USC 103(a) Fujimura et al in view of newly cited Duffy.

Claims 7-11 are rejected on the non-statutory grounds of obviousness-type double patenting over claims 2, 4, 5, 7 8 and 10-14 of copending Application No. 10/631363.

Listing of Claims:

1 -6 (canceled)

7. (previously presented) A power steering pump comprising:

a housing defining a bore having an axis, an outlet adjacent one end of the bore, a fluid discharge port communicating with the bore at a first axial location, and a fluid bypass port communicating with the bore at a second axial location;

pumping elements disposed within the housing for pumping fluid to said fluid discharge port and communicating with said bypass port for drawing fluid therefrom;

a flow control valve slideably received in the bore and defining an inlet to the bypass port;

a plunger operatively connected to the flow control valve and responsive to an applied electromagnetic field to slide the flow control valve to various positions between a fully closed position wherein the flow control valve closes the inlet and a fully open position wherein maximum fluid flows from the bore to the fluid bypass port through the inlet;

a spring operatively coupled to the flow control valve for biasing the flow control valve in the open position;

an electromagnetic coil for applying an electromagnetic field to the plunger to vary the position of the plunger and thereby vary the size of the inlet and to proportionally control fluid flow to the fluid bypass port.

8. (previously presented) A power steering pump in accordance with claim 7 wherein the pumping elements comprise a cam chamber and a rotor having retractable vanes disposed within the cam chamber.

9. (previously presented) A power steering pump in accordance with claim 7, further comprising a sleeve received in the bore and having an opening communicating with the fluid bypass port, and wherein the flow control valve is slideably received within the sleeve and includes an opening that cooperates with the opening in the sleeve to define the inlet to the fluid bypass port.

10. (previously presented) A power steering pump comprising:

- a housing defining a bore having an axis and open end, a fluid discharge port communicating with the bore at a first axial location proximate to the open end, and a fluid bypass port communicating with the bore at a second axial location;

- pumping elements disposed within the housing and adapted for drawing fluid from the fluid bypass port and pumping fluid to said fluid discharge port;

- a sleeve received in bore and having an opening communicating with the fluid bypass port;

- a flow control valve slideably received in the bore having an opening, said flow control valve being slideable to various positions between a fully closed position that closes the opening in the sleeve and a fully open position, wherein the opening in the flow control valve cooperates with the opening in the sleeve to define an inlet to [allow] proportionally control fluid flow to the fluid bypass port;

- a tubular extension sealing mounted onto the housing at said open end;

- a plunger disposed within the tubular extension and operatively connected to the flow control valve, said plunger being responsive to an applied electromagnetic field to slide the valve axially to various open positions between the fully closed position and the fully open position and to vary the position of the flow control valve [in the open position] to thereby vary the size of the inlet;

- a spring engaging the plunger for biasing the flow control valve in the open position;

- an electromagnetic coil disposed about the extension and adapted for applying an electromagnetic field to the plunger and causing it to be responsively positioned.

11. (previously presented) A power steering pump in accordance with claim 10 wherein the extension includes an end cap, and wherein plunger includes a rear end adjacent the end cap and a pressure equalization passage extending from the rear end and communicating with fluid adjacent the flow control valve.